

Amendments to the Claims

1. (Currently amended) A computer-implemented method of interpreting a query, formed of at least a first query term and a second query term, with respect to a database of items, comprising:

identifying at least ~~one~~ a first candidate single-term interpretation ~~for associated with~~ the first query term;

identifying at least ~~one~~ a second candidate single-term interpretation ~~for associated with~~ the second query term;

identifying ~~one or more~~ a first candidate multiple-term ~~interpretations~~ interpretation, wherein ~~a~~ the first candidate multiple-term interpretation is a combination of at least the first candidate single-term ~~interpretations~~ interpretation and the second candidate single-term interpretation;

providing a plurality of semantic approaches for associating ~~one or more of the~~ candidate multiple-term ~~interpretations~~ interpretation with items in the database;

identifying a set of associated items in the database that are associated with the first candidate multiple-term interpretation according to a particular semantic approach of the plurality of semantic approaches, wherein the set of associated items includes at least two items;
and

~~deriving determining a first contextual derived score for each the first candidate multiple-term interpretation from the set of associated items using the database and at least one of said semantic approaches.~~

2. (Original) The method of claim 1, wherein the plurality of semantic approaches include treating a candidate multiple-term interpretation as a conjunction.

3. (Original) The method of claim 1, wherein the plurality of semantic approaches include treating a candidate multiple-term interpretation as a disjunction.

4. (Original) The method of claim 1, wherein the plurality of semantic approaches include partially matching a candidate multiple-term interpretation.

5. (Original) The method of claim 1, wherein the plurality of semantic approaches include a disjunctive approach, a conjunctive approach and a partial match approach.

6. (Currently amended) The method of claim 1, wherein for ~~at least one the first~~ candidate multiple-term interpretation the ~~first derived contextual~~ score incorporates information about the particular semantic approach that is used for the set of associated items.

7. (Currently amended) The method of claim 6, wherein incorporating information about the particular semantic approach includes using a measure of ~~the a~~ number of terms in the first candidate multiple-term interpretation that are in an associated result the set of associated items.

8. (Currently amended) The method of claim 7, wherein using a measure of ~~the a~~ number of terms in the first candidate multiple-term interpretation that are in an associated result

the set of associated items is a dominant factor in determining deriving a the first contextual derived score.

9. (Currently amended) The method of claim 1, further comprising the steps of identifying a third candidate single-term interpretation associated with the first query term and identifying a fourth candidate single-term interpretation associated with the second query term, identifying a second wherein determining for each candidate multiple-term interpretation, wherein the second candidate multiple-term interpretation is a combination of at least the third candidate single-term interpretation and the fourth candidate single-term interpretation, and identifying a second includes using a first of said plurality of semantic approaches for identifying an associated result set of associated items in the database that are associated with the second for a first candidate multiple-term interpretation and according to a second particular semantic approach of said plurality of semantic approaches, and deriving a second derived score for the second candidate multiple-term interpretation from the second set of associated items, for identifying an associated result set for a second candidate multiple term interpretation wherein the particular semantic approach and the second particular semantic approach are different.

10. (Currently amended) The method of claim 1, the step of identifying a set of associated items further including wherein determining a contextual score for each candidate multiple-term interpretation includes applying selecting a first semantic approach of said plurality of semantic approaches and determining a first set of associated items in the database that are associated with the first candidate multiple-term interpretation according to the first semantic approach, and selecting for identifying a first associated result set and a second semantic approach of said plurality of semantic approaches, for identifying a second associated result set for a first candidate multiple term interpretation and determining a second set of

associated items in the database that are associated with the first candidate multiple-term interpretation according to the second semantic approach, and selecting between the first of said plurality of semantic approaches set of associated items and the second of said plurality of semantic approaches set of associated items for determining to identify the set of associated items for the deriving the first contextual derived score for the first candidate multiple-term interpretation.

11. (Currently amended) A computer-implemented method of interpreting a query formed of at least a first query term and a second query term with respect to a database of items, comprising:

identifying at least one a first candidate single-term interpretation and a second candidate single-term interpretation for associated with the first query term;

identifying at least one a third candidate single-term interpretation for associated with the second query term;

pruning the candidate single-term interpretations, wherein the first and third candidate single-term interpretations each have more associated items than a threshold, and wherein the second candidate single-term interpretation has fewer associated items than the threshold, by eliminating the second candidate single-term interpretation;

identifying one or more a first candidate multiple-term interpretation, wherein at the first candidate multiple-term interpretation is a combination of candidate single-term interpretations that have not been pruned at least the first candidate single-term interpretation and the third candidate single-term interpretation; and

~~determining~~ deriving a first contextual ~~derived~~ score for each ~~the first~~ candidate multiple-term interpretation using from a set of associated items in the database that are associated with the first candidate multiple-term interpretation, wherein the set of associated items includes at least two items.

12. (Cancelled)

13. (Currently amended) The method of claim ~~1~~11, wherein the database includes at least one item that is not associated with any of the first, second or third single-term interpretations, wherein ~~eliminating~~ pruning each ~~the~~ candidate single-term interpretation interpretations to which insufficient items in the database correspond comprises includes generating a second query that identifies a reduced ~~maximal result set of~~ of all of the items in the database that are associated with any of the first, second or third candidate single-term interpretations, ~~and evaluating an intersection query for each of the first, second and third candidate single-term interpretation interpretations with the maximal~~ reduced result set to identify ~~results~~ a set of associated items for each ~~the intersection query of the first, second and third, and eliminating each candidate single-term interpretation interpretations for which the intersection query yields fewer results than a threshold.~~

14. (Currently amended) The method of claim 13, wherein the threshold is 1.

15. (Currently amended) The method of claim ~~1~~11, wherein the database includes at least one item that is not associated with any of the candidate single-term interpretations, wherein pruning includes determining a ~~maximal result~~ reduced set of all of the items in the database that are associated with any of the candidate single-term interpretations.

16. (Cancelled)

17. (Cancelled)

18. (Currently amended) The method of claim 11, further comprising determining a ~~context independent~~first score for each ~~the first~~ candidate single-term interpretation, that depends on the first query term but not on query terms other than the first query term, nor on any single-term interpretations associated with the query terms other than the first query term, a second score for the second candidate single-term interpretation, that depends on the first query term but not on query terms other than the first query term, nor on any single-term interpretations associated with the query terms other than the first query term, and a third score for the third candidate single-term interpretation, that depends on the second query term but not on query terms other than the second query term, nor on any single-term interpretations associated with the query terms other than the second query term, wherein pruning includes using the ~~context independent~~first, second and third scores of the candidate single-term interpretations for selecting candidate single-term interpretations to prune.

19. (Currently amended) A computer program product, residing on a computer readable medium, for use in interpreting queries, wherein a first query is composed of at least a first query term and a second query term, relative to a database of items, the computer program product comprising instructions for causing a computer to:

identify at least ~~one~~ a first candidate single-term interpretation for the first query term;

identify at least ~~one~~ a second candidate single-term interpretation for the second query term;

~~identify one or more~~ a first candidate multiple-term interpretation, wherein
~~a the first candidate multiple-term interpretation is a combination of at least the first candidate~~
~~single-term interpretations interpretation and the second candidate single-term interpretation;~~

provide a plurality of semantic approaches for associating a candidate multiple-term
~~interpretations interpretation~~ with items in the database;

identify a set of associated items from the database that are associated with the first
candidate multiple-term interpretation according to a particular semantic approach of the
plurality of semantic approaches, wherein the set of associated items includes at least two items;
 and

~~determine~~ derive a first derived contextual score for each the first candidate multiple-term
~~interpretation using the database and at least one of said semantic approaches from the set of~~
associated items.

20. (Currently amended) The computer program product of claim 19, wherein for at
~~least one the first candidate multiple-term interpretation the contextual~~ first derived score
 incorporates information about the particular semantic approach that is used.

21. (Original) The computer program product of claim 19, wherein the plurality of
 semantic approaches include a conjunctive approach.

22. (Original) The computer program product of claim 19, wherein the plurality of
 semantic approaches include a disjunctive approach.

23. (Original) The computer program product of claim 19, wherein the plurality of semantic approaches include a partial match approach.

24. (Original) The computer program product of claim 19, wherein the plurality of semantic approaches include a disjunctive approach, a conjunctive approach and a partial match approach.

25. (Currently amended) The computer program product of claim 19, wherein instructions for causing a computer to incorporate information about the particular semantic approach used include instructions for using a measure of ~~the~~ a number of terms in the first candidate multiple-term interpretation that are in ~~an~~ the set of associated ~~items~~ result set.

26. (Currently amended) The computer program product of claim 25, wherein using a measure of ~~the~~ a number of terms in the first candidate multiple-term interpretation that are in the set of ~~an~~ associated ~~result set~~ items is a dominant factor in ~~determining~~ deriving a the contextual first derived score.

27. (Currently amended) The computer program product of claim 19, further comprising instructions for causing a computer to identify a third candidate single-term interpretation associated with the first query term and a fourth candidate single-term interpretation associated with the second query term, identify a second candidate multiple-term interpretation which is a combination of at least the third candidate single-term interpretation and the fourth candidate single-term interpretation, wherein instructions for causing a computer to determine a contextual score for each candidate multiple term interpretation include instructions for using a first of said plurality of semantic approaches for identifying an associated result set for a first candidate multiple term interpretation and identify a second set of associated items in

the database that are associated with the second candidate multiple-term interpretation according to a second particular semantic approach of said plurality of semantic approaches, and derive a second derived score for identifying an associated result set for a the second candidate multiple-term interpretation from the second set of associated items, wherein the particular semantic approach and the second particular semantic approach are different.

28. (Currently amended) The computer program product of claim 19, wherein instructions for causing a computer to determine a ~~contextual~~ first derived score for ~~the first~~ each candidate multiple-term interpretation include instructions for applying a first of said plurality of semantic approaches for identifying a first ~~associated result set~~ of associated items and a second of said plurality of semantic approaches for identifying a second ~~associated result set of~~ associated items for ~~the first~~ candidate multiple-term interpretation, and selecting between the first ~~set of said plurality of semantic approaches~~ associated items and the second ~~of said plurality set of semantic approaches~~ associated items to identify the set of associated items for ~~determining~~ deriving the ~~contextual~~ first derived score for the first candidate multiple-term interpretation.

29. (Currently amended) A computer program product, residing on a computer readable medium, for use in interpreting queries, wherein a first query is composed of at least a first query term and a second query term, relative to a database of items, the computer program product comprising instructions for causing a computer to:

identify at least ~~a first~~ one candidate single-term interpretation and a second candidate single-term ~~for~~ interpretation for the first term;

identify at least ~~a third~~ one candidate single-term interpretation for the second term;

prune the candidate single-term interpretations, wherein the first candidate single-term interpretation and the third candidate single-term interpretation have more associated items than a threshold, and the second candidate single-term interpretation has fewer associated items than the threshold, by eliminating the second candidate single-term interpretation;

identify ~~one or more~~ at least a first candidate multiple-term interpretation, wherein a the first candidate multiple-term interpretation is a combination of at least the first candidate single-term interpretations that have not been pruned interpretation and the third candidate single-term interpretation; and

~~derived~~ determine a first contextual derived score for the first each candidate multiple-term interpretation using from a set of associated items in the database that are associated with the first candidate multiple-term interpretation.

30. (Cancelled)

31. (Currently amended) The computer program product of claim 30~~29~~, wherein the database includes items that are not associated with any of the first, second or third candidate single-term interpretation, wherein eliminating each candidate single term interpretation to which insufficient items in the database correspond pruning further includes generating a second query that identifies a reduced maximal result-set of all of the items associated with any of the first, second or third candidate single-term interpretations, evaluating an intersection query for each of the first, second and third candidate single-term interpretation-interpretations with the reduced maximal result-set to identify results a set of associated items for each of the first, second and third candidate single-term interpretations for the intersection query, and eliminating

~~each candidate single-term interpretation for which the intersection query yields fewer results than a threshold.~~

32. (Original) The computer program product of claim 31, wherein the threshold is 1.

33. (Currently amended) The computer program product of claim 30, wherein instructions for causing a computer to prune include instructions for determining a ~~maximal result-set~~ of all of the items in the database that are associated with any of - the first, second, or third candidate single-term interpretations.

34. (Cancelled)

35. (Cancelled)

36. (Currently amended) The computer program product of claim 30, further comprising instructions for determining a first score for the first candidate single-term interpretation, that depends on the first query term but not on query terms other than the first query term, nor on any single-term interpretations associated with the query terms other than the first query term, a second score for the second candidate single-term interpretation, that depends on the first query term but not on query terms other than the first query term, nor on any single-term interpretations associated with the query terms other than the first query term, and a third score for the third candidate single-term interpretation, that depends on the second query term but not on query terms other than the second query term, nor on any single-term interpretations associated with the query terms other than the second query term, wherein instructions for causing a computer to prune include instructions for using the ~~context-independent~~ first, second and third scores for selecting candidate single-term interpretations to prune.

37. (Currently amended) A computer-implemented method of interpreting a query formed of at least a first query term and a second query term with respect to a database of items, comprising:

identifying at least ~~one~~ a first candidate single-term interpretation for the first query term;

identifying at least ~~one~~ a second candidate single-term interpretation for the second query term;

determining a first context-independent score for the first ~~each~~ candidate single-term interpretation, wherein the first score depends only on the first query term and not on any query term other than the first query term, nor on any single-term interpretations associated with the query terms other than the first query term;

determining a second score for the second candidate single-term interpretation, wherein the second score depends only on the second query term and not on any query term other than the second query term, nor on any single-term interpretations associated with the query terms other than the second query term;

identifying ~~one or more~~ a first candidate multiple-term ~~interpretations~~ interpretation, wherein ~~a~~ the first candidate multiple-term interpretation is a combination of at least the first candidate single-term ~~interpretations~~ interpretation and the second candidate single-term interpretation;

~~determining~~ deriving a first derived combined context-independent score for ~~each~~ the first candidate multiple-term interpretation using from at least the first context-independent score

~~for each~~ the first candidate single-term interpretation ~~in the candidate multiple-term interpretation~~
and the second score for the second candidate single-term interpretation;

providing a plurality of semantic approaches for associating ~~one or more of the~~
 candidate multiple-term ~~interpretations~~ interpretation with items in the database;

identifying a set of associated items in the database for the first candidate multiple-term
interpretation according to a particular semantic approach of said plurality of semantic
approaches, wherein the set of associated items includes at least two items;

~~determining~~ deriving a contextual ~~second derived~~ score for ~~each~~ the first candidate
 multiple-term interpretation from the set of associated items ~~using the database and at least one of~~
~~said semantic approaches, wherein for at least one candidate multiple-term interpretation the~~
~~contextual score incorporates~~ and information about the particular semantic approach that is
 used; and

~~determining~~ deriving an overall score for ~~each~~ the first candidate multiple-term
 interpretation by ~~using the contextual score and the combined context-independent~~ combining
the first derived score and the second derived score for the first candidate multiple-term
 interpretation.

38. (Currently amended) A computer-implemented method of interpreting a query
 formed of at least a first query term and a second query term with respect to a database of items,
 comprising:

identifying at least ~~one~~ a first and a second candidate single-term interpretation for the
 first term;

identifying at least ~~one~~ a third candidate single-term interpretation for the second term;

determining a ~~context-independent~~ first score for each ~~candidate single-term interpretation~~ the first candidate single-term interpretation, that depends on the first query term but not on query terms other than the first query term, nor on any single-term interpretations associated with the query terms other than the first query term;

determining a second score for the second candidate single-term interpretation, that depends on the first query term but not on query terms other than the first query term, nor on any single-term interpretation associated with the query terms other than the first query term;

determining a third score for the third candidate single-term interpretation, that depends on the second query term but not on query terms other than the second query term, nor on any single-term interpretation associate with the query terms other than the second query term;

pruning the candidate single-term interpretations, wherein the first candidate single-term interpretation and the third candidate single-term interpretation have more associated items in the database than a threshold and the second candidate single-term interpretation has fewer associated items in the database than the threshold, by eliminating the second candidate single-term interpretation;

identifying ~~one or more~~ a first candidate multiple-term ~~interpretations~~ interpretation, wherein ~~a~~ the first candidate multiple-term interpretation is a combination of at least the first candidate single-term interpretations interpretation and the second candidate single-term interpretation ~~that have not been pruned;~~

~~determining~~ deriving a combined context-independent first derived score for each the first
 candidate multiple-term interpretation ~~using the context-independent score for each candidate~~
~~single-term interpretation in the multiple-term interpretation~~ by combining at least the first score
for the first candidate single-term interpretation and the second score for the second candidate
single-term interpretation;

~~determining~~ deriving a secondeontextual derived score for each the first candidate
 multiple-term interpretation from a set of associated items in using the database that are
associated with the first candidate multiple-term interpretation, wherein the set of associated
items includes at least two items; and

~~determining~~ deriving an overall score for each the first candidate multiple-term
 interpretation by using combining the contextual-first derived score and the combined context-
independent-second derived score for the first multiple-term interpretation.

39. (Currently amended) A computer program product, residing on a computer
 readable medium, for use in interpreting queries, wherein a first query is composed of at least a
 first query term and a second query term, relative to a database of items, the computer program
 product comprising instructions for causing a computer to:

identify at least ~~one~~ a first candidate single-term interpretation for the first query term;

identify at least ~~one~~ a second candidate single-term interpretation for the second query
 term;

determine a first a context-independent score for the first each-candidate single-term
interpretation, that depends on the first query term but not on query terms other than the first

query term, nor on any single-term interpretations associated with the query terms other than the first query term;

determine a second score for the second candidate single-term interpretation, that depends on the second query term but not on query terms other than the second query term, nor on any single-term interpretation associated with the query terms other than the second query term;

identify ~~one or more~~ a first candidate multiple-term interpretation, wherein a the first candidate multiple-term interpretation is a combination of at least the first and second candidate single-term interpretations;

~~determine~~ derive a ~~combined context-independent~~ first derived score for each the first candidate multiple-term interpretation by combining the first using the context-independent score for each the first candidate single-term interpretation in the multiple-term interpretation and the second score for the second candidate single-term interpretation;

provide a plurality of semantic approaches for associating a candidate multiple-term ~~interpretations~~ interpretation with items in the database;

identify a set of associated items in the database that are associated with the first candidate single-term interpretation according to a particular semantic approach of the plurality of semantic approaches, wherein the set of associated items includes at least two items;

~~determine~~ derive a ~~contextual~~ second derived score for each the first candidate multiple-term interpretation using the database and at least one of said semantic approaches from the set of associated items, wherein for at least one the first candidate multiple-term interpretation the

~~contextual-second derived~~ score incorporates information about the particular semantic approach that is used; ~~and~~

determine an overall score for ~~each~~ the first candidate multiple-term interpretation by ~~using~~ combining the contextual-first derived score and the ~~combined context-independent~~ second derived score for the candidate multiple-term interpretation.

40. (Currently amended) A computer program product, residing on a computer readable medium, for use in interpreting queries, wherein a first query is composed of at least a first query term and a second query term, relative to a database of items, the computer program product comprising instructions for causing a computer to:

identify at least ~~one~~ a first candidate single-term interpretation and a second candidate single-term interpretation for the first term;

identify at least ~~one~~ a third candidate single-term interpretation for the second term;

determine a ~~context-independent~~ first score for ~~each~~ the first candidate single-term interpretation, wherein the first score depends only on the first query term and not on any query term other than the first query term, nor on any single-term interpretations associated with the query terms other than the first query term;

determine a second score for the second candidate single-term interpretation, wherein the second score depends only on the first query term and not on any query term other than the first query term, nor on any single-term interpretations associated with the query terms other than the first query term;

determine a third score for the third candidate single-term interpretation, wherein the third score depends only on the second query term and not on any query term other than the second query term, nor on any single-term interpretations associated with the query terms other than the second query term;

prune the candidate single-term interpretations, wherein the first candidate single-term interpretation and the third candidate single-term interpretation have more associated items in the database than a threshold and the second candidate single-term interpretation has fewer associated items in the database than the threshold, by eliminating the second candidate single-term interpretation;

identify ~~one or more~~ a first candidate multiple-term interpretation, wherein a the first candidate multiple-term interpretation is a combination of at least the first candidate single-term interpretation and interpretations that have not been pruned the third candidate single-term interpretation;

determine a ~~combined context independent~~ first derived score for each the first candidate multiple-term interpretation using the context independent by combining at least the first score for each the first candidate single-term interpretation in the multiple term and the third score for the third candidate single-term interpretation;

identify a set of associated items in the database that are associated with the candidate multiple-term interpretation, wherein the set of associated items includes at least two items;

~~determine~~ derive a contextual second derived score for each the first candidate multiple-term interpretation using the database from the set of associated items; and

determine an overall score for each the first candidate multiple-term interpretation by ~~using combining the contextual~~ first derived score and the ~~combined context independent~~ second derived score for the multiple-term interpretation.